

Message from the Director

This annual publication features highlights of the research supported by the NIDDK on the diseases within its mission. The Institute's research scope encompasses many of the most costly and debilitating diseases and conditions affecting this Nation. These include diabetes, endocrine and metabolic disorders; obesity and nutritional disorders; and diseases of the digestive system, kidneys, urologic tract and blood.

By providing a "snapshot" of recent NIDDK-funded advances, this publication illustrates the benefits of our research investments to human health. For example, among this year's highlights, we report that intensive glucose control lowers the risk of heart disease and stroke by about 50 percent in people with type 1 diabetes, a result published in the December 22, 2005, issue of the *New England Journal of Medicine*. These findings emerged from a follow-up study of patients who took part in the Diabetes Control and Complications Trial more than a decade ago—thus demonstrating the continuing payoffs from long-term research investments. Another important recent development is that the U.S. incidence rates of irreversible kidney failure—also known as end-stage renal disease (ESRD)—have now stabilized after a 20-year climb. This hopeful finding points to the effectiveness of efforts to translate research discoveries into better means of diagnosis and early intervention. However, it is important to emphasize that these research benefits have not yet been realized across the entire U.S. population. Minority populations continue to bear a disproportionate burden from ESRD, and from type 2 diabetes, its frequent precursor. Thus, we are intensifying the activities of our National Kidney Disease Education Program and our National Diabetes Education Program to tailor and direct messages to minority populations regarding disease risks and science-based prevention and treatment strategies.

In addition to reporting on recent advances, this publication traces the multi-step path to research achievements through several "Stories of Discovery" and "Scientific Presentations." These essays illustrate the ways that incremental insights combine to form a continuum of progress. Complementing these scientific summaries are several personal stories of patients who suffer from diseases within the NIDDK's purview. These individual profiles tell of hope and determination, but also underscore the challenges that still must be overcome to conquer these diseases. Many of the diseases within the NIDDK mission are chronic. They cause years of affliction, with symptoms that range in severity, often with long-term detrimental effects on quality of life. Several, including type 1 and type 2 diabetes, chronic kidney disease, and hepatitis C, can ultimately lead to organ failure and death. Collectively, these diseases affect many millions of Americans, and cost hundreds of billions of dollars annually in direct medical costs and indirect costs resulting from disability, lost work and premature mortality. Given the overwhelming burden of chronic diseases, it is imperative that we develop effective strategies to preempt their onset and halt or slow their progression by propelling the rapid translation of new research discoveries into interventions that will directly benefit those at risk for disease, current patients, and future generations.



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